

# PATENT ABSTRACTS OF JAPAN

(11) Publication number : 09-028715

(43) Date of publication of application : 04.02.1997

(51) Int.Cl. A61B 17/36  
A61C 3/02

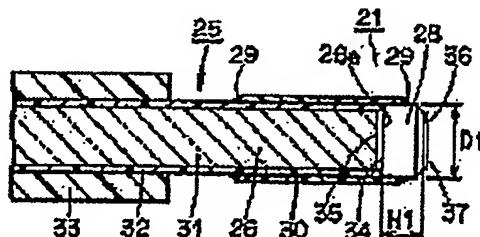
(21) Application number : 07-178770 (71) Applicant : SUMITOMO ELECTRIC IND LTD

(22) Date of filing : 14.07.1995 (72) Inventor : SHIBATA KENICHIRO

## (54) LASER PROBE AND MEDICAL LASER TREATMENT DEVICE USING THE SAME

### (57) Abstract:

**PROBLEM TO BE SOLVED:** To provide high-reliability laser probe, its emitting end protector, laser hand piece and medical laser treatment device with which the emitting end of a light transmission body is prevented from being damaged, the attenuation of laser beams caused by the damage of an end face is reduced as much as possible, the reduction of transpiring ability is suppressed and the light transmission body is not dropped out of the probe but can be smoothly pulled out of a fine part.



**SOLUTION:** A window 28, whose outer diameter is less than 3.0mm and whose thickness is less than 1.0mm, composed of diamond or MgO is mounted on an emitting end 26 of an optical fiber 25 by a sleeve

30. Otherwise, the window 28 is provided by being directly connected to the end faces of a core 31 and a clad 32. The end face of the emitting end 26 is prevented from being damaged by energy, which is generated by emitting the laser beams, and the sticking of a transpired object.

### LEGAL STATUS

[Date of request for examination] 09.06.2000

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other

than the examiner's decision of rejection or  
application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's  
decision of rejection]

[Date of requesting appeal against  
examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office